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EXTRAORDINARY

PART III—SECTION 4

NO. 5] SIMLA, THURSDAY, JULY 11, 1963

OFFICE OF THE CHIEF INSPECTOR OF MINES
AND
THE CHAIRMAN, BOARD OF (METALLIFEROUS) MINING
EXAMINATIONS
NOTIFICATION

Dhanbad, the 24th June 1963

No. Board/MM/20000/63—In accordance with the provision laid down in Regulation 13(4) of the Metalliferous Mines Regulations, 1961, the following byelaws for the conduct of examinations for and grant of manager's certificates of Competency are hereby made:

**BYE-LAWS FOR THE CONDUCT OF EXAMINATIONS FOR AND
GRANT OF MANAGER'S CERTIFICATE OF COMPETENCY**

1. *Type and Extent of Training*—(1) For purpose of regulation 16(2)(a)—

(a) Practical experience as a workman on different operation shall be approved as below :

- | | |
|---|---|
| (i) Experience as a face worker or operator of face machinery | Upto 24 months. |
| (ii) Experience in blasting, timbering, stone work or sinking | Upto 18 months. |
| (iii) Experience in taking measurements/samples of mine air or mine dust, on haulage and track work; or as survey assistant or chairman; or as electrician or mechanic. | Upto 12 months (including experience under sub-clause (b) and Clause (2); |
| (iv) Experience as banksman, bellman and onsetter ; operator of winding/haulage machinery and of pumps and mechanical ventilators | Upto six months. |

(b) Practical experience as a mining apprentice shall be approved as below :

- (i) Experience on general mining work .. In full.
- (ii) Experience on ventilation and dust work .. Upto 12 months.
- (iii) Experience on survey work Upto six months.

Experience on practical mining research work, if carried out in the workings belowground, may be approved upto a maximum period of 12 months.

(2) For purposes of Regulation 16(2)(b), practical experience of mine officials shall be approved as below :

- (i) Experience as mestri, mining mate, shift-boss, mine foreman, ventilation officer, safety officer, assistant manager or underground manager or in any equivalent position .. In full.
- (ii) Experience as surveyor .. Upto six months.
- (iii) Experience as engineer Upto six months.

Experience in the capacity of other officials may be approved to an extent determined by the Board, provided that such official exercised real responsibility involving actual control and direction of some type of mining work. In case of such experience the exact nature of work performed and degree of responsibility should be stated in the certificate.

(3) For purposes of Regulation 19, only such practical experience in coal mines would be approved as has been obtained in mines having an average monthly output of not less than 2,500 tons of coal, and the extent of experience approved shall depend on the size, and degree of mechanisation of the mines and the nature of experience obtained.

(4) The practical experience of a candidate shall be approved only upto 60 days before the date of commencement of the examination.

(5) Practical experience extending over a period of less than three months in case of workers, and four weeks in case of officials and mining apprentices, at a time shall not be approved.

(6) Every certificate of practical experience should contain precise information about the capacity in which the candidate worked, the nature of work done, and the date of commencement and termination of experience at each mine. No certificate of practical experience shall be considered unless it is granted by the manager of the mine. Every such certificate shall also carry the signature of the applicant, attested by the manager. Every certificate obtained after the publication of these byelaws, shall be in a form prescribed by the Board.

2. *Frequency of examination*—After the date specified in this behalf by the Board, the examinations shall be held once at least in every year.

3. *Applications to be supported by original certificates etc.*—No application shall be considered unless it is supported by original certificates as to qualifications, practical experience, age, sound health, first-aid and character, and is accompanied by evidence that the prescribed fee has been paid. The certificate of practical experience shall not be returned to the candidate.

4. *Appointment of examiners*—(1) So far as practicable, the examiners appointed by the Board for each of the examinations for the First Class Manager's Certificate and the Second Class Manager's Certificate shall be two or more mining engineers, each holding the First Class Manager's Certificate and an Inspector of Mines who shall also act as the Secretary for the examination.

(2) Except in an emergency, no member of the Board shall act as an examiner.

5. *Subjects and Syllabus for examination*—(1) The candidates shall be examined in the following subjects:

- (a) Winning and Working.
- (b) Mine Ventilation, Fires, Inundation.
- (c) Mining Machinery.
- (d) Mine Surveying.
- (e) Mine Management, Legislation and General Safety.

(2) The syllabus for the examination for the First Class Manager's Certificate shall be as laid out in *Appendix I*, and for the Second Class Manager's Certificate shall be as laid out in *Appendix II*.

6. *Type of examination*—(1) The examination for each subject shall consist of a written paper, (of three hours' duration) and an oral test, so however that, in case of candidate who has not reached the standard laid down in Byelaw 8(1), the examiners may eliminate the oral test.

(2) Questions for each written paper shall be prepared by the examiner concerned and submitted to the Board. Every question paper shall be set by the Board in consultation with the examiner concerned.

(3) The oral test may be held at a date after the written examination and notified to every candidate concerned by the Secretary. The notice shall also indicate the place of the oral test.

7. *Subject Marks*—Every subject shall carry a total maximum of 140 marks, a maximum of 100 marks for the written paper and of 40 marks for the oral test.

8. (1) In order to qualify for the oral test, a candidate must obtain, in the written examination, not less than 40 per cent of the maximum marks each in at least four of the five papers and not less than 50 per cent of maximum marks of the five papers taken together.

(2) In order to pass the examination, a candidate must obtain:

- (i) not less than 40 per cent of the maximum marks in each of the five subjects, taking the written examination and the oral test separately,
- (ii) not less than 50 per cent of the maximum marks in aggregate of the written examination and the oral test, taken separately, and
- (iii) an aggregate of not less than 60 per cent of the maximum marks of the written examination and the oral test taken together.

9. *Re-examination in one or more subjects*—(1) If a candidate has satisfied the provisions of clauses (ii) and (iii) of byelaw 8(2) and has also obtained not

less than 40 per cent of the maximum marks in the oral test in each of the subjects, but has failed to obtain 40 per cent of the maximum marks in the written examination in one of the five subjects, he shall be eligible for re-examination in the subject in which he has so failed, at the next succeeding two written examinations.

(2) If a candidate has obtained:

- (i) in the written examination not less than 40 per cent of the maximum marks in each of the subjects, and not less than 60 per cent of the maximum marks in all the subjects taken together,
- (ii) in the oral test, not less than 50 per cent of the maximum marks in aggregate but has failed to obtain 40 per cent of the maximum marks in any one or two subjects,

he shall be eligible for re-examination in the subject or subjects in which he has so failed, at the next two succeeding oral tests.

(3) Every candidate who becomes eligible to be re-examined under Clause (1) and (2) of this Byelaw, shall be duly informed of the fact by the Secretary.

Provided that if any such candidate is unable, by reason of illness, to attend at the next succeeding examination aforesaid, he may at the discretion of the Board be permitted to be re-examined at the next respective succeeding examination.

(4) A candidate re-examined under this Byelaw shall be deemed to have passed in the examination as a whole if he obtains not less than 60 per cent of the maximum marks in the written paper or the oral test, as the case may be, in the subject or subjects concerned.

10. *Conduct of the Written Examination*—All candidates shall conduct themselves as required by the Secretary. The rules laid down in Appendix III shall apply to the conduct of the written examination.

11. *Penalty for misconduct*—Any candidate who submits a false certificate or counterfeits a certificate or makes a false declaration or adopts unfair means during the examination, may be disqualified by the Board and also debarred from appearing at any subsequent examination for a specified period not exceeding three years depending upon the facts of the case.

12. *Declaration of Results*—The results of the examinations, as approved by the Board, shall be announced by the Secretary on a date fixed by the Board.

APPENDIX I

SYLLABUS FOR EXAMINATION FOR FIRST CLASS MANAGER'S CERTIFICATE

(Under Metalliferous Mines Regulations, 1961).

(a) *Winning and Working.*

Mineral deposits, their classification. Prospecting and application of geology to mining.

Methods of boring. Boring through disturbed strata. Bore hole surveying.

Methods of sinking. In ordinary and water-logged grounds. In running sand etc. Freezing, cementation and other special methods. Shaft supports, temporary and permanent. Tubbings.

Driving of incline shafts and drifts.

Siting, development and layout of mines, including surface and underground arrangements, layout and development of shaft-top, shaft bottom and haulage arrangements.

Opencast methods of mining. Different layouts. Mechanised quarrying with deephole blasting and heavy machinery. Benching and other safety precautions.

Underground mining. Methods of development. Influence of depth thickness of ore-body, inclination etc. on selection of method of development.

Methods of stoping (open stopes, timbered stopes, filled stopes, shrinkage stopes and other methods).

Sampling, Reserve Calculation and Mine Valuation.

Mechanised mining. Modern layouts and designs. Mechanized stone drifting.

Support of strata. Roadway and face supports, their types, setting withdrawal etc. Packing and stowing.

Roof control. Theories of ground movement. Theories of strata control. Strength of rock. Shaft pillars. Protection of surface structures. Subsidence. Problems of deep mining, rock bursts.

Use of explosives. Blasting techniques, and their relative efficiency.

(b) Mine Ventilation, Fires, Inundation.

Laws of airflow in mines. Theory of air resistance etc. Resistance and splitting problems.

Natural ventilation.

Mechanical ventilators, different types, their efficiency and characteristics. Fan accessories, Booster and auxiliary fans. Ventilation of headings and sinking shafts. Distribution, measurement and control of air mines. Reversal of ventilation.

Heat and humidity. Sources, effects and control of heat in mines. Geothermic gradients. Cooling of air.

Ventilation planning. Pollution of air in mines. Determining requirements of ventilation. Determination of size of shafts, airways etc. Design of ventilation systems. Ventilation surveys. Ventilation plans.

Occurrence, properties characteristics detection and measurement of firedamp. Dilution of firedamp. Inflammability of firedamp. Fire damps explosions.

Flame and electric safety lamps. Their design, use and maintenance Testing of safety lamps. Lamp Houses and Organisations. —

Fires and spontaneous heating. Methods of preventing, detecting and controlling mine fires. Sealing off fire-areas. Build-up of extinctive atmosphere.

Fire fighting, both on surface and belowground.

Source of danger from water. Precautions to prevent inundations and irruptions of water. Boring machines for exploratory working. Water dams. Water lodgements. Water danger plans.

Recovery of mines after explosions, fires and inundations. Reports on such occurrences.

(c) *Mining Machinery*

Strength of materials. Applied mechanics.

Machine Design. Different types of gears and drives. Bearings. Collars and joints. Brakes and friction clutches. Governors.

Machine tools and workshop processes.

Generation, transmission and utilization of power. Compressed air. Efficiency of power systems, electricity and steam. Safety aspects.

Air compressors and auxiliary equipment. Transmission of compressed air. Air turbines and air engines.

Application of electricity in mines. Motors switchgear, other appliances. Circuit protection, remote control and safety precautions. Electric cables, their installation.

Heat engines. General outline of working principles of steam generators and auxiliary equipment. Condensing plant. Reciprocating steam engines. Turbines. Internal combustion engines. Conduct of gas, oil and steam engine trials. Boiler trials.

Mechanical efficiency of engines. Measurement of indicated and brake horsepower.

Drills and loading machines and other modern mining machinery.

Design of Winding, haulage and drainage systems.

Winding equipment, Winding engines, Winding systems. Koeps and skip winding. Drums and sheavers. Ropes and guiders. Braking and signalling equipment. Decking arrangements. Overwind prevention and safety devices. Installation, examination and testing of winding equipment.

Haulage and Transport. Haulage system and layout. Types of rope haulages, locomotives conveyors. Details of Haulage roads, rails and tracks. Self-acting inclines. Aerial ropeways. Haulage of men belowground. Tubs and mine cars. Creepers and tipplers. Signalling. Safety devices.

Pumping. Types of pumps. Laying of water mains. Dealing with acid water. Sand pumps. Drainage. Lodgements.

Plants for screening, sizing and Beneficiation of minerals.

(d) Mine Surveying

Measurement of distances. Chain surveying. Errors in chaining and plotting. Optical square.

Plane table surveying.

Use of magnetic needle. Magnetic declination; its determination. Forms of miners dials and other compass instruments. Dialling. Loose and fast needle surveying.

Theodolites; types, adjustments and uses. Triangulation. Base-line and angle measurements. Precise traversing. Traversing along steep workings with or without auxiliary telescopes, Techeometry.

Levels. Geometrical, trigonometric and physical levelling. Contours and contouring. Traverse, co-ordinates and levelling problems.

Use, care, testing and adjustment of instruments.

Plotting by protractor and co-ordinates. Use of scales and drawing instruments.

Dip and strike problems. Outcrop problems. Boreholes surveying. Surveying calculations.

Computation of areas and volumes. Earthwork. Building estimation.

Laying out of rails-curves, surface and underground.

Principles of reinforced concrete construction, including design of beams, columns, retaining walls and other structures. Properties of other building materials.

Methods of correlation, surface and underground. Measurement of depth of inclined roadways and shafts.

Determination of azimuth, latitude and longitude.

Propagation and adjustment of errors. Theory of errors.

Types of plans. Their preparation, care, storage and preservation.

Legislation concerning mine plans and sections. Duties and responsibilities of surveyors.

(e) Mine Management, Legislation and General Safety

Mine Organisation. Principles of management and industrial discipline. Personnel management.

Recruitment, selection, training and control of staff.

Mines Act, the Metalliferous Mines Regulations, and Rules etc. made under the Act. Electricity Act and Rules applicable to mines. Other legislation applicable to mines.

Accidents. Their causes and prevention. Accident statistics and analysis. Rates of accidents. Bearing of accidents on efficiency. Accident reports.

First Aid and ambulance work.

Investigation after mine fires and explosions.

Mine rescue. Mine gases and their physiological effects. Rescue equipment. Resuscitation and reviving apparatus. Selection and training for rescue work.

Silicosis and pneumoconiosis. Physiological aspects of breathing in dust-laden atmospheres. Dust-sampling and sampling instrument. Methods of counting and analysis.

Other miners' diseases. Their symptoms, prevention and treatment.

Lighting. General principles of artificial lighting. Lighting standards and their assessment.

Sanitation and health.

APPENDIX II

SYLLABUS FOR EXAMINATION FOR SECOND CLASS MANAGER'S CERTIFICATE

(Under Metalliferous Mines Regulations, 1961)

(a) Winning and Working

Mineral Deposits and their classification.

Method of boring. Boring through disturbed strata.

Methods of sinking. In ordinary and water-logged grounds shaft supports, temporary and permanent.

Driving of drifts.

Layout development of simple shaft-top, shaft-bottom and haulage arrangements. Opencast methods of mining. Different layouts. Mechanized quarrying with deephole blasting and heavy machinery. Benching and other safety precautions.

Underground mining. Methods of development. Methods of stoping. Stone drifting. Support of strata. Roadway and face supports, their types, setting, withdrawal etc. Packing and stowing. Roof control; Rock-bursts. Shaft pillars. Protection of surface structures subsidence.

Use of explosives.

(b) Mine Ventilation, Explosions, Fires, Inundation

Natural ventilation. Mechanical ventilators. Fan accessories. Booster and auxiliary fans. Ventilation of headings and sinking shafts. Distribution, measurement and control of air in mines. Reversal of ventilation.

Heat and humidity.

Pollution of air in mines. Determining requirements of ventilation. Ventilation surveys. Ventilation plans.

Fires and spontaneous heating. Methods of preventing, detecting and controlling mine fires. Sealing off fire-areas.

Fire-fightings; both on surface and belowground.

Sources of danger from water. Precautions to prevent inundations and irruptions of water. Boring machines for exploratory workings. Water dams. Water lodgments. Water danger plans.

Recovery of mines after fires and inundations.

(c) *Mining Machinery*

Strength of materials. Applied Mechanics.

Different types of gears and drives. Bearings and joints. Bracks Machine tools and workshop processes.

Generation, transmission and utilisation of power. Compressed air electricity and steam. Safety aspect.

Compressors and Compressed air engine. Transmission of compressed air.

Application of electricity in mines. Motors, switchgear, electric cables, their installation. Safety precautions.

General outline of working principles of steam generators. Reciprocating steam engines. Internal combustion engines.

Drilling and loading machines.

Design of haulage and drainage systems.

Winding equipment. Winding engines. Drums shieves. Ropes and guides. Braking and signalling equipment. Decking arrangements. Safety devices. Installation examination and testing of winding equipment.

Haulage and transport. Haulage systems and layouts. Types of haulage. Rope haulages. Details of haulage roads, rails and tracks. Self acting inclines, tubs, creepers and tipplers. Signalling. Safety devices.

Pumping Types of pumps. Laying of water mains. Dealing with acid water. Drainage, Lodgements.

Plants for screening and sizing of mineral ores.

(d) *Mine Surveying*

Measurement of distances. Chain surveying. Errors in chaining and plotting. Optical square.

Plane table surveying.

Use of magnetic needle. Magnetic declination, its determination. Forms of miners' dials and other compass instruments. Dialling. Loose and fast needle surveying.

Levels, Geometrical and physical levelling. Contours and contouring.

Traverse and levelling problems.

Use, care, testing and adjustment of instruments.

Plotting by protractor and co-ordinates. Use of scales and drawing instruments.

Dip and strike problems, Outcrop problems. Surveying calculations. Computation and areas and volumes. Earthwork.

Laying out of rail-curves, surface and underground.

Types of plans. Their preparation, care, storage and preservation. Legislation concerning mine plans and sections.

(e) Mine Management, Legislation and General Safety

Mine Organisation. Recruitment and control of staff.

Mines Act, Metalliferous Mines Regulations and Rules etc. made under the Act. Other Legislation applicable to mines.

Accidents, Their cause and prevention. Accident reports. First-Aid.

Mines rescue, Mines gases and their physiological effects. Rescue equipment. Resuscitation and reviving apparatus. Selection and training for rescue work.

Silicosis and pneumoconiosis. Dust-sampling and analysis.

Other mines' diseases. Their symptoms. Prevention and Treatment.

Lighting standards and their assessment.

Sanitation, and health.

APPENDIX III

RULES GOVERNING THE CONDUCT OF THE WRITTEN EXAMINATION

1. No candidate shall be admitted into the examination hall until he has produced an authorisation issued by the Secretary. No candidate arriving more than 30 minutes late shall be permitted to attend the examination; and no candidate arriving late shall be eligible for any extra compensatory time.

2. Before entering the examination hall, every candidate shall leave all books, notes and papers etc., out-side.

3. Every candidate shall be required to sign in a register in which his roll number would be recorded.

4. Paper will be supplied, and no paper other than that so supplied shall be used.

5. Names shall not be written on the answer book. Every candidate shall write his roll number on the slip attached to the answer book and nowhere else. Any person who writes his roll number or name or initials etc., on his answer book is liable to be disqualified.

6. Ink will be provided. Candidate shall bring own pens and pencils, drawing pens and drawing instruments, including protractor where required.

7. Slide Rules may be used. Candidates will be supplied with logarithmic tables if considered necessary by the examiner.

8. The calculations and other work by which a result is obtained shall be clearly shown on the left-hand side page, in immediate connection with the answer to the question under reference.

9. Sketches may be made to illustrate answers. When sketches are asked for, it would be understood that, unless otherwise stated, free hand sketches with dimensions are all that is necessary; and candidates need not spend time in making finished drawings.

* 10. Any candidate desiring to consult the examiner or requiring any paper or other material should stand in his seat to draw attention, but should not shout or call out.

11. Any candidate speaking to any other candidate, or consulting any book or notes, or using paper other than that supplied by the Board, or using any other unfair means or acting in a manner considered improper by the examiner, shall be liable to be disqualified.

12. No candidate shall leave the examination hall before the expiry of one hour after the commencement of the examination.

13. When a candidate has completed the answers to the questions or when the time allowed for answering the questions has elapsed, or when a candidate has been disqualified under Rule 11, he must hand over the answer book to the Secretary of the examination and at once leave the examination hall.

G. S. JABBI

*Chief Inspector of Mines
and*

Chairman, Board of (Metalliferous) Mining Examinations

**OFFICE OF THE CHIEF INSPECTOR OF MINES AND
CHAIRMAN, BOARD OF (METALLIFEROUS) MINING EXAMINATIONS**

NOTIFICATION

Dhanbad, the 24th June 1963

No. Board/MM/20001/63—In accordance with the provision laid down in Regulation 13(4) of the Metalliferous Mines Regulations, 1961, the following bye-laws for the conduct of examinations for, and grant of Mine Surveyor's Certificate of Competency are published:

***BYE-LAWS FOR CONDUCT OF EXAMINATIONS FOR AND GRANT
OF MINE SURVEYOR'S CERTIFICATE OF COMPETENCY***

1. *Type and Extent of Training*—(1) The practical experience of a candidate shall be approved only upto 60 days before the date of commencement of the examination.

(2) Practical experience extending over a period of less than four weeks at a time shall not be approved.

(3) Every certificate of practical experience should contain precise information about the capacity in which the candidate worked, the nature of work done, and the dates of commencement and termination of experience at each mine. No certificate of practical experience shall be considered unless it is signed by the manager of the mine or in case of persons employed in an organisation other than a mine which is concerned with surveying the workings below ground of a mine, by the officer-in-charge of the survey work. Every such certificate shall also carry the signature of the applicant, attested by the manager or the Officer-in-Charge as the case may be. Every certificate obtained after the publication of these bye-laws shall be in a form prescribed by the Board.

2. *Frequency of examinations*—The examinations shall be held once at least in every year.

3. *Applications to be supported by original certificate etc.*—No application shall be considered unless it is supported by original certificates as to qualifications, practical experience, age, sound health, First-Aid and character, and is accompanied by evidence that the prescribed fee has been paid. The certificates of practical experience shall not be returned to the candidate.

4. *Appointment of Examiners*—(1) So far as practicable the examiners appointed by the Board shall be one or more persons, holding the Mine Surveyor's Certificate and an Inspector of Mines who shall also act as the Secretary for the examination.

(2) Except in an emergency, no member of the Board shall act as an examiner.

5. *Syllabus and Type of Examination*—(1) The examination shall consist of two written papers and an oral test; so however that, in case of candidate who has obtained an aggregate of less than 100 marks in the written papers, the examiners may eliminate the oral test.

(2) The syllabus for the examination shall be as laid down in Appendix I.

(3) Questions for each written paper shall be prepared by the examiner concerned and submitted to the Board. The question papers shall be set by the Board in consultation with examiner concerned.

(4) The oral test may be held at a date after the written examination and notified to every candidate concerned by the Secretary. The notice shall indicate the place of the oral test.

6. *Subject marks*—The examination shall carry a total maximum of 300 marks a maximum of 100 marks for each of the two written papers and of 100 marks for the oral test.

7. *Qualifying and Pass Marks etc.*—In order to qualify for the oral test, a candidate must obtain not less than 100 marks in the written examination; and in order to pass the examination, not less than 50 marks in the oral test and a total aggregate of not less than 180 marks.

8. *Conduct of the Written Examination*—All candidates shall conduct themselves as required by the Secretary. The rules laid down in Appendix II shall apply to the conduct of the written examination.

9. *Penalty for misconduct*—Any person who submits a false certificate or counterfeits a certificate or makes a false declaration or adopts unfair means during the examination, may be disqualified by the Board and also debarred from appearing at any subsequent examination for a specified period not exceeding three years depending upon the facts of the case.

10. *Declaration of results*—The results of the examinations, as approved by the Board, shall be announced by the Secretary on a date fixed by the Board.

APPENDIX I

SYLLABUS FOR THE EXAMINATION FOR MINE SURVEYOR'S CERTIFICATE

(Under Metalliferous Mines Regulations, 1961)

FIRST PAPER

Measurement of distances. Chain Surveying. Errors in chaining and plotting. Optical square.

Plane Table Surveying.

Use of magnetic needle. Magnetic declination; its determination. Forms of Miners' dials and other compass instruments. Dialling. Loose and fast needle surveying.

Theodolites; types, adjustments and uses. Triangulation. Base-line and angle measurements. Precise traversing.

Tacheometry.

Levels. Geometrical, trigonometric and physical levelling. Contours and contouring.

Traverse, co-ordinates and levelling problems.

Use, care, testing and adjustment of instruments.

SECOND PAPER

Plotting by protractor and co-ordinates. Use of scales and drawing instruments.

Dip and strike problems. Outcrop problems. Borehole surveying. Surveying calculations.

Computation of areas and volumes.

Laying out of rail-curves, surface and underground.

Methods of correlation, surface and underground. Measurement of depths of inclined roadways and shafts.

Determination of azimuth, latitude and longitude.

Propagation and adjustment of errors. Theory of errors.

Types of plans. Their preparation, care, storage and preservation.

Legislation concerning mine plans and sections. Duties and responsibilities of surveyor.

Geological map reading.

APPENDIX II

RULES GOVERNING THE CONDUCT OF THE WRITTEN EXAMINATION

1. No candidate shall be admitted into the examination hall until he has produced an authorisation issued by the Secretary. No candidate arriving more than 30 minutes late shall be permitted to attend the examination; and no candidate arriving late shall be eligible for any extra compensatory time.

2. Before entering the examination hall, every candidate shall leave all books, notes and papers etc., out-side.

3. Every candidate shall be required to sign in a register in which his roll number would be recorded.

4. Paper will be supplied, and no paper other than that so supplied shall be used.

5. Names shall not be written on the answer book. Every candidate shall write his roll number on the slip attached to the answer book and nowhere else. Any person who writes his roll number or name or initials etc., on his answer book is liable to be disqualified.

6. Ink will be provided. Candidate shall bring own pens and pencils, drawing pens and drawing instruments, including protractor where required.

7. Slide Rules may be used. Candidates will be supplied with logarithmic tables if considered necessary by the examiner.

8. The calculations and other work by which a result is obtained shall be clearly shown on the left-hand side page, in immediate connection with the answer to the question under reference.

9. Sketches may be made to illustrate answers. When sketches are asked for, it would be understood that, unless otherwise stated, free hand sketches with dimensions are all that is necessary; and candidates need not spend time in making finished drawings.

10. Any candidate desiring to consult the examiner or requiring any paper or other material should stand in his seat to draw attention, but should not shout or call out.

11. Any candidate speaking to any other candidate, or consulting any book or notes, or using paper other than that supplied by the Board, or using any other unfair means or acting in a manner considered improper by the examiner, shall be liable to be disqualified.

12. No candidate shall leave the examination hall before the expiry of one hour after the commencement of the examination.

13. When a candidate has completed the answers to the questions or when the time allowed for answering the questions has elapsed, or when a candidate has been disqualified under Rule 11, he must hand over the answer book to the Secretary of the examination and at once leave the examination hall.

G. S. JABBI

*Chief Inspector of Mines
and*

Chairman, Board of (Metalliferous) Mining Examinations

**OFFICE OF THE CHIEF INSPECTOR OF MINES AND
CHAIRMAN, BOARD OF (METALLIFEROUS) MINING EXAMINATIONS**

Dhanbad, the 21st June 1963

NOTIFICATION

No. Board/MM/20002/63—In accordance with the provision laid down in Regulation 13(4) of the Metalliferous Mines Regulations, 1961, the following Byelaws for the conduct of the Examinations for, and grant of Mine Foreman's Certificate of Competency, are hereby made :

***BYE-LAWS FOR THE CONDUCT OF EXAMINATIONS FOR, AND
GRANT OF MINE FOREMAN'S CERTIFICATE OF COMPETENCY***

1. *Application to be supported by documents*—No application shall be considered unless it is supported by original certificates as to qualifications (*i.e.* Mate's Certificate, Valid Gas testing certificate, valid First-Aid certificate), literacy, sound health and character, and is accompanied by evidence that the prescribed fee has been paid.

2. *Holding of Examinations*—Examinations shall be held at such times and such places as may be fixed by the Board and notified to the candidates. The examination fees of a candidate who fails to appear for an examination at the appointed place and time without sufficient cause to the satisfaction of the Chief Inspector shall be forfeited.

3. *Appointment of Examiners*—(1) So far as practicable, the examiners appointed by the Board for each examination shall be two agents or managers holding the First Class Manager's Certificate and an Inspector of Mines who shall also act as the Local Secretary for the examination.

(2) Except in an emergency, no member of the Board shall act as an examiner.

4. *Subjects and Syllabus for examination*—(1) Candidates for the grant of Mine Foreman's unrestricted certificate must hold the Mining Mate's unrestricted certificate, and shall be examined in the following four subjects as per detailed syllabus as laid out in Appendix I.

- (a) General Safety and Legislation.
- (b) Methods of working, Storage, transport and use of explosives ;
- (c) Ventilation and precautions with respect to fires and inundations.
- (d) Elements of Mining Machinery.

(2) Candidates for the grant of Mine Foreman's Certificate restricted to mines having opencast workings only shall be examined in the following subjects as per detailed syllabus laid out in Appendix II—

- (a) General Safety and Legislation.
- (b) Methods of opencast working and precautions with respect to inundations; and
- (c) Storage, transport and use of explosives.
- (d) Elements of Mining Machinery.

5. *Type of examination* (1) The examination will consist of one written paper (of two months' duration) and an oral test by two examiners.

(2) The written paper shall be meant mainly to test the candidate's ability to write reports, to express himself clearly in writing and to answer elementary questions relating to the various subjects mentioned in bye-law 4. The technical and professional knowledge of the candidate shall be tested mainly at the oral test.

(3) The written paper may be answered in English, Hindi or the language of the district in which examination is held. The oral test will also be conducted in these languages.

(4) The question paper for the written examination shall be set by the examiner concerned in consultation with the Local Secretary.

(5) The oral test may be held at a date or dates on or after the written examination. The date and place of the oral test shall be notified to the candidate by the Local Secretary.

6. *Examination marks*—(1) The written paper and the oral test by each of the examiners shall each carry a maximum of 50 marks making a total of 150 marks.

(2) In order to pass the examination, a candidate must obtain—

- (i) not less than 25 marks in the written paper;
- (ii) not less than 20 marks with each of the two examiners in the orals test; and not less than 50 marks in the orals test as a whole; and
- (iii) not less than 90 marks in the aggregate of written paper and orals test.

7. *Re-examination*—A candidate who has failed in an examination for a Mine Foreman's Certificate shall not be eligible for re-examination for a period of six months from the date of the examination when he failed.

8. *Conduct of the Examination*—Every candidate shall conduct himself as required by the local Secretary. The rules laid down in Appendix III shall apply to the conduct of the written examination.

9. *Penalty for misconduct*—Any candidate who submits a false certificate or counterfeits a certificate or makes a false declaration or adopts unfair means during the examination, may be disqualified by the Board and also debarred from appearing at any subsequent examination for a specified period not exceeding three years depending upon the facts of the case.

10. *Declaration of results*—The result of the examination shall be notified in writing to the individual candidates concerned at a later date.

APPENDIX I

SYLLABUS FOR THE EXAMINATION FOR FOREMAN'S (UNRESTRICTED) CERTIFICATE OF COMPETENCY

(Under Metalliferous Mines Regulations, 1961)

(a) General Safety and Legislation

Duties and responsibilities of workmen, competent persons and officials (excluding managers, assistant managers, engineers and surveyors). Discipline amongst workers and control of staff.

Provisions of the Metalliferous Mines Regulations and Rules relating to Mine Workings, Explosives and Shotfiring, Haulage. General knowledge of regulations and rules relating to ventilation; precautions against danger from fire, dust, gas and water; and of other provisions, the enforcement of, and compliance with which is and can be the responsibility of mine foreman.

Writing of reports required to be made by mine foreman under the regulations.

Dangerous occurrences in mines, and how to deal with them. Accidents. Their causes and prevention. Accident reports. Disturbing the place of accident.

Mine Rescue. Physiological effect of mine gases. Rescue equipment. First Aid.

Sanitation and health. Miners' diseases. Their main symptoms and prevention. Suppression of dust.

(b) Methods of working

Nature of occurrence of mineral deposits. Dangers and Precautionary measures while approaching geological disturbances.

The purpose and utility of boreholes in mines. Shaft sinking, safety devices. Shaft supports, temporary and permanent in sinking and working shafts. Examination of shafts and outlets.

Opencast methods of mining-mechanised and hand-cut working. Bench-ing and other safety precautions.

Underground mining; General principles of development and stoping. Stone drifting.

Support of strata-Roadway and face supports, their types setting; withdrawal etc. Packing and stowing.

Elements of roof control—Protection of surface structures Working beneath statutorily restricted areas and surface structures.

Gates and fencing; different kinds of fences,

Inspection of workings and roadways.

Travelling roadway, their maintenances and inspection.

Reading of statutory plans.

Use and safe handling of explosives. Heavy Blasting.

(c) Ventilation and Precautions with respect to Explosions, Fires, Inundation

Natural and mechanical ventilation. Ventilation of headings and sinking shafts. Siting of auxiliary fans underground. Distribution, measurement and control of air in mines. Reading of anemometre. Calculation of areas and volumes. Maintenance of ventilation appliances.

Elementary knowledge of causes of prevention of firedamp explosion. Limits of inflammability of fire-damp.

Elements of design of flame and electric safety lamps; their use, examination and maintenance.

Pollution of air and irruption of gases in mines. Occurrence properties, characteristics, detection and measurement of firedamp and noxious gases. Sampling of air. Determination of environmental conditions.

Fires and spontaneous heating. Elements of preventing, detecting and controlling mine fires. Sealing off fire-areas. Fire stoppings and their examination. Precautions against outbreak of surface fires. Fire fighting, both on surface and belowground.

Inspection of old workings.

Sources of danger from surface and underground water. Precautions to prevent inundations and irruptions of water. Boring machines for exploratory working. Water dams. Water danger plans.

Recovery of mines after explosions, fires and inundations. Precautionary measure during re-opening and dewatering of mines.

(d) Elements of Mining Machinery

Safety aspects and safe use of different kinds of machinery used in mines. Brakes. Generation and use of compressed air. Use of steam engines.

Application of electricity in mines. Safety precautions.

Use of Internal Combustion engines in mines.

Winding equipments; Ropes and guides. Signalling and decking arrangements. Safety devices, examination of winding equipment and shaft fittings.

Haulage and transport; Types of haulages. Rope and locomotive haulages. Self-acting inclines. Haulage roads and roadways. Rails and tracks; their maintenance and inspection. Tubs, Signalling, Safety devices, Unsafe practices. Derailments.

Drainage of water and water lodgements. Types of pumps. Principle and use of syphons.

APPENDIX II

SYLLABUS FOR THE EXAMINATION FOR MINE FOREMAN'S CERTIFICATE OF COMPETENCY RESTRICTED FOR MINES HAVING OPENCAST WORKING ONLY

(Under the Metalliferous Mines Regulations, 1961)

(a) General Safety and Legislation

Duties and responsibilities of workmen, competent persons and officials (excluding managers, assistant managers, engineers and surveyors). Discipline amongst workers, and control of staff.

Provisions of the Metalliferous Mines Regulations and Rules relating to mine workings; Explosives and Shotfiring, Haulage; General knowledge of regulations and rules relating to precautions against danger from dust and water,

and of other provisions, the enforcement of, and compliance with which is and can be the responsibility of mine foremen.

Writing of reports required to be made by mine foremen under the regulations.

Accidents. Their causes and prevention. Accident reports. Disturbing the place of accident.

First-Aid.

Sanitation and health. Miners' diseases; their main symptoms and prevention. Suppression of dust.

(b) Methods of working

Nature of occurrence of mineral deposits. Dangers and precautionary measures while approaching geological disturbances.

The purpose and utility of boreholes in proving deposits.

Opencast methods of mining-mechanised and hand-cut working. Bench-ing and other safety precautions.

Gates and fencing. different kind of fences.

Inspection of opencast workings.

Reading of statutory plans.

Use and safe handling of explosives. Heavy blasting.

Sources of danger from surface water. Precautions to prevent inundations and irruptions of water. Water dams. Water danger plans.

(c) Elements of Mining Machinery

Safety aspects and safe use of different kinds of machinery used in mines. Brakes.

Generation and use of Compressed Air.

Use of steam engines.

Application of electricity in mines. Safety precautions.

Use of Internal combustion engines in mines.

Haulage and transport. Types of haulages. Rope and locomotive haulages

Self-acting-incline. Rails and tracks; their maintenance and inspection.

Tubs. Signalling, Safety devices, Unsafe practices. Derailments.

Drainage of water and water lodgements. Types of pumps. Principle and use of syphons.

APPENDIX III

RULES GOVERNING THE CONDUCT OF THE WRITTEN EXAMINATION

1. No candidate shall be admitted into the examination hall until he has produced an authorisation issued by the Secretary. No candidate arriving more than 30 minutes late shall be permitted to attend the examination; and no candidate arriving late shall be eligible for any extra compensatory time.

2. Before entering the examination hall, every candidate shall leave all books, notes and papers etc., out-side.

3. Every candidate shall be required to sign in a register in which his roll number would be recorded.

4. Paper will be supplied, and no paper other than that so supplied shall be used.

5. Names shall not be written on the answer book. Every candidate shall write his roll number on the slip attached to the answer book and nowhere else. Any person who writes his roll number or name or initials etc., on his answer book is liable to be disqualified.

6. Ink will be provided. Candidate shall bring own pens and pencils, drawing pens and drawing instruments, including protractor where required.

7. Slide Rules may be used. Candidates will be supplied with logarithmic tables if considered necessary by the examiner.

8. The calculations and other work by which a result is obtained shall be clearly shown on the left-hand side page, in immediate connection with the answer to the question under reference.

9. Sketches may be made to illustrate answers. When sketches are asked for, it would be understood that, unless otherwise stated, free hand sketches with dimensions are all that is necessary; and candidates need not spend time in making finished drawings.

10. Any candidate desiring to consult the examiner or requiring any paper or other material should stand in his seat to draw attention, but should not shout or call out.

11. Any candidate speaking to any other candidate, or consulting any book or notes, or using paper other than that supplied by the Board, or using any other unfair means or acting in a manner considered improper by the examiner, shall be liable to be disqualified.

12. No candidate shall leave the examination hall before the expiry of one hour after the commencement of the examination.

13. When a candidate has completed the answers to the questions or when the time allowed for answering the questions has elapsed, or when a candidate has been disqualified under Rule 11, he must hand over the answer book to the Secretary of the examination and at once leave the examination hall.

G. S. JABBI

*Chief Inspector of Mines
and Chairman, Board of (Metalliferous)
Mining Examinations*

**OFFICE OF THE CHIEF INSPECTOR OF MINES AND CHAIRMAN,
BOARD OF (METALLIFEROUS) MINING EXAMINATIONS**

NOTIFICATION

Dhanbad, the 24th June 1963

No. Board/MM/20003/63—In accordance with the provision laid down in Regulation 13(4) of the Metalliferous Mines Regulations, 1961, the following bye-laws for the conduct of examinations for, and grant of, Mining Mate's Certificate of Competency are hereby made :

**BYE-LAWS FOR THE CONDUCT OF EXAMINATIONS FOR, AND
GRANT OF, MINING MATE'S CERTIFICATE OF COMPETENCY**

1. *Type and extent of practical experience etc.*—(a) The practical experience and training of a candidate for the grant of Mining Mate's (Unrestricted) Certificate shall include :—

- | | |
|--|---|
| (i) Experience/training in timbering and stoping operations. | For at least six months (two months in case of a candidate who has received a diploma or certificate in Scientific and Mining training after a course of at least two years at an educational institution approved in that behalf by the Central Government or who has taken a degree in Scientific and Mining subjects at a University approved in this behalf by the Central Government). |
| (ii) Experience/training in blasting. | For at least six months (two months in case of a candidate who has received a diploma or certificate in Scientific and Mining training after a course of at least two years at an educational institution approved in that behalf by the Central Government or who has taken degree in Scientific and Mining subjects at a University approved in this behalf by the Central Government). |

Provided that when the candidate for the grant of a Mining Mate's (Unrestricted) Certificate is a person who holds a Mining Mate's Certificate restricted for opencast workings, his practical experience and training should include practical experience and training in timbering and stoping operations for a period of three months (one month in case of a candidate who has received a diploma or certificate in Scientific and Mining training after a course of at least two years at an educational institution approved in that behalf by the Central Government or who has taken a degree in Scientific and Mining subjects at a University approved in this behalf by the Central Government obtained after he obtained his restricted certificate.

(b) The practical experience and training of a candidate for the grant of Mining Mate's Certificate restricted for mines having opencast workings only shall include experience/training in blasting for at least 12 months (two months in case of a candidate who has received a diploma or certificate in Scientific and Mining training after a course of at least two years at an educational institution approved in that behalf by the Central Government or who has taken a degree in Scientific and Mining subjects at a University approved in this behalf by the Central Government).

(c) Experience as an engineer or surveyor in a mine may be accepted against the remaining experience for a total period not exceeding 12 months.

2. For purpose of sub-clause (1) above, only such practical experience in opencast mines would be approved as has been obtained in a mine having an average employment of not less than 50 persons. Experience in underground mines would be approved in toto.

3. Practical experience extending over a period of less than three months in case of workers, and four weeks in case of officials and mining apprentices, at a time shall not be approved.

4. Every certificate of practical experience should contain precise information about the capacity in which the candidate worked, the nature of work done, and the dates of commencement and termination of experience at each mine. No certificate of practical experience shall be considered unless it is granted by the manager of the mine.

2. *Application to be supported by original certificate etc.*—No application shall be considered unless it supported by original certificates as to qualifications, if any, literacy, practical experience, age, sound health, first-aid and character and is accompanied by evidence that the prescribed fee has been paid.

3. *Penalty for misconduct*—Any candidate who submits a false certificate or counterfeits a certificate or makes a false declaration or adopts unfair means during the examination, may be disqualified by the Board and also debarred from appearing at any subsequent examination for a specified period not exceeding three years depending upon the facts of the case.

4. *Holding of Examinations*—Examinations shall be held at such times and such places as may be fixed by the Board and notified to the candidate. The examination fees of a candidate who fails to appear for an examination at the appointed place and time without sufficient cause to the satisfaction of the Chief Inspector shall be forfeited.

5. *Appointment of Examiners*—(1) So far as practicable, the examiners appointed by the Board for each examination shall be two managers or assistant managers holding the First or Second Class Certificate of Competency and an Inspector of Mines who shall also act as the Local Secretary for the examination.

(2) Except in an emergency, no member of the Board shall act as an examiner.

6. *Type of Examination*—(1) The examination shall be conducted orally in Hindi or in the language of the district in which examination is held.

(2) (a) Candidates for the grant of Mining Mate's (Unrestricted) Certificate shall be examined in the following subjects :—

- (i) Method of examining roof and sides of working places and roadways etc.
- (ii) Method of timbering, packwalling and setting support; withdrawal of supports ;
- (iii) Blasting and transport and use of explosives in mines;
- (iv) Ventilation and mine gases—elementary.
- (v) Provisions of the Metalliferous Mines Regulations and Rules made under the Mines Act, 1952, relating to the safety of persons employed in the mines in general, and to the duties of Mates and Blasters in particular.

(b) Candidates for the grant of Mining Mate's Certificate restricted for mines having opencast workings only shall be examined in the following subjects :—

- (i) Blasting and transport and use of explosives in opencast mines;
- (ii) Benching and sloping of opencast workings; examination and dressing of sides; Fencing of opencast workings and other dangerous places.
- (iii) Provisions of the Metalliferous Mines Regulations and Rules made under the Mines Act, 1952, relating to the safety of persons employed in mines in general and to the duties of Mates and Blasters in particular.

7. *Conduct of the Examination*—Every candidate shall conduct himself as required by the Local Secretary of the Examination.

8. *Identity of candidates etc.*—At the time of examination every candidate shall hand over the authorisation issued to him for appearing in the examination and two unmounted photograph of himself (of a size approximately 5 cm. × 6.5 cm.) to the Local Secretary for the examination who after satisfying himself that each photograph is a likeness of the candidate shall endorse each of them on the back with the name of the candidate.

9. *Successful candidates*—(1) In order to qualify, a candidate must obtain not less than 40 per cent of the maximum marks in each subject and not less than 60 per cent of the total marks.

(2) The Secretary of the examination shall record the left hand thumb impression of every successful candidate.

10. *Unsuccessful candidates*—A candidate who has failed in an examination for a Mining Mate's Certificate shall not be eligible for re-examination for a period of three months from the date of the examination in which he failed.

G. S. JABBI,

Chief Inspector of Mines

&

Chairman, Board of (Metalliferous) Mining Examinations

**OFFICE OF THE CHIEF INSPECTOROUS OF MINING EXAMINATION
BOARD OF (METALLIFEROUS) MINING EXAMINATIONS.**

NOTIFICATION

Dhanbad, the 24th June, 1963

No. Board/MM/20004/63—In accordance with the provision laid down in Regulation 13(4) of the Metalliferous Mines Regulations, 1961, the following bye-laws for the conduct of examinations, for and grant of, Winding Engineman's I Class Certificate and Winding Engineman's II Class Certificate are hereby made :—

**BYE-LAWS FOR THE CONDUCT OF EXAMINATIONS FOR THE
GRANT OF WINDING ENGINEMAN'S I CLASS AND II CLASS
CERTIFICATES OF COMPETENCY**

1. *Application to be supported by original certificates etc.*—No application shall be considered unless it is supported by original certificates as to qualification (if any), literacy, practical experience, age, sound health, character, and is accompanied by evidence that the prescribed fee has been paid.

2. *Holding of examination*—Examinations shall be held at such times and such places as may be fixed by the Board and notified to the candidate. The examination fee of a candidate who fails to appear for an examination at the appointed place and time without sufficient cause to the satisfaction of the Chief Inspector shall be forfeited.

3. *Appointment of Examiners*—(1) So far as practicable, the examiners appointed by the Board for each examination shall be a qualified engineer possessing experience of winding installations in Mines, and an Inspector of Mines (Mechanical) who shall also act as the Secretary for the examination.

(2) Except in an emergency no member of the Board shall act as an examiner.

4. *Type of examination*—(1) The examination shall be conducted orally in Hindi or in the language of the district in which the examination is held and shall include a practical test.

(2) The candidates for the grant of Winding Engineman's I Class and II Class Certificate shall be examined in the subjects listed in Appendix.

Provided that the standard of examination for the candidates for II Class Certificate shall be such as to test mainly the general knowledge of the candidates in these subjects.

5. *Conduct of the examination*—(1) Every candidate shall conduct himself as required by the Secretary of the examination.

(2) Any candidate who submits a false certificate or counterfeits a certificate or makes a false declaration or adopts unfair means during the examination, may be disqualified by the Board and also debarred from appearing at any subsequent examination for a specified period not exceeding three years depending upon the facts of the case.

6. *Identity of candidates, etc.*—At the time of examination, every candidate shall hand over the authorisation issued to him for appearing at the examination and two unmounted photographs of himself (of a size approximately 5 cm. × 6·5 cm.) to the Secretary for the examination, who after satisfying himself that each photograph is a likeness of the candidate shall endorse each of them on the back with the name of the candidate.

7. *Successful candidates*—(1) In order to qualify, a candidate must obtain not less than 40 per cent of the minimum marks with each examiner and not less than 60 per cent of the total marks.

(2) The Secretary of the examination shall record the left hand thumb impression of every successful candidate.

8. *Unsuccessful candidate*—A candidate who has failed in an examination for a Winding Engineman's Certificate shall not be eligible for re-examination for a period of three months from the date of the examination in which he failed.

9. *Re-examination of persons whose certificates were cancelled*—Any person whose certificate has been cancelled by the Board under Regulation 29(3) of the Metalliferous Mines Regulations, 1961, may appear in the examination, but not before the expiry of three years from the date of the order of cancellation.

APPENDIX

SUBJECTS FOR EXAMINATION OF WINDING ENGINEMEN

1. General knowledge about apparatus under pressure of Compressed Air, gas or steam; knowledge of testing, precautions and indicators for pressure.

2. Working and examination of machinery (Reg. 176). Knowledge of provisions laid down in this regulation:—

(a) Precautions regarding moving parts of machinery (Reg. 174). Knowledge of provisions laid down in this regulation.

3. *Signalling*—Types of signal; Code of signal for man winding, material winding and sinking shafts.

4. *General Idea of Hoist (Function and Operation)*—Steam; Air Compressor and electric, Direct and geared driver; valve gear, bearings, couplings, type of drums; operating levers, reversing levers, emergency safety levers and link motion.

5. General Idea of Various Indicators and Recorders Pressure indicator; ammeter; voltmeter; depth indicator; speed indicator and recorders; adjustment and marking where applicable.

6. *Slow Banking*—Indicator and limit of speed for man winding or material winding. Some knowledge of operation of the equipment for automatic retardation of speed.

7. *Brakes*—Various types including power operated brakes; salient features of each type; their use, test and adjustment of brakes; examination, of brakes including brake path; types of brake lining, normal position when operated; safety in the event of failure of power supply.

8. *Emergency Safety Devices*—Emergency stop, trip levers, etc.; emergency brakes.

9. *Safety Contrivances*—Against over wind; limit and test and some knowledge of its operation. Against over speed; limit and test and some knowledge of its operation, for slow banking; and limit for man winding and material winding; knowledge of detaching hooks; bell plate or box, keps, dogs, guides, receivers etc., and automatic indicator for keps at insets.

10. *General Idea of Clutch*—Type, operation, examination, position with respect of brakes; interlocking device.

11. *General Idea of Electrical Circuits* Brakers, transformers; controllers, resistance and electric bells; working voltage; interlocks and safety precautions.

12. *General Idea of Winding Ropes*—Relation to winding drum and pulleys; examination of and attachment; lubrication.

13. *Working Hoist*—Key points for efficient and safe working; cause of jerks and how to avoid.

14. *Engineman's Duties*—Full knowledge of duties laid down in Regulation 54; general alertness and reaction to emergency.

G. S. JABBI,
Chief Inspector of Mines
&
Chairman, Board of (Metalliferous) Mining Examinations

**OFFICE OF THE CHIEF INSPECTOR OF MINES AND CHAIRMAN,
BOARD OF (METALLIFEROUS) MINING EXAMINATIONS**

NOTIFICATION

Dhanbad, the 24th June, 1963

No. Board/MM/20005/63—In accordance with the provision laid down in Regulation 13(4) of the Metalliferous Mines Regulations, 1961, the following byelaws for the conduct of examinations for, and grant of, Blaster's Certificate of Competency are hereby made :

***BYE-LAW FOR THE CONDUCT OF EXAMINATIONS FOR, AND
GRANT OF, BLASTER'S CERTIFICATE OF COMPETENCY.***

1. (1) Only such practical experience in opencast mines would be approved as has been obtained in mines having an average employment of not less than 25 persons.

(2) Practical experience extending over a period of less than three months in case of workers, and four weeks in case of officials and mining apprentices, at a time shall not be approved.

(3) Every certificate of practical experience should contain precise information about the capacity in which the candidate worked, the nature of work done, and the dates of commencement and termination of experience at each mine. No certificate of practical experience shall be considered unless it is granted by the manager of the mine.

(4) Any candidate who submits a false certificate or counterfeits a certificate or makes a false declaration or adopts unfair means during the examination, may be disqualified by the Board and also debarred from appearing at any subsequent examination for a specified period not exceeding three years depending upon the facts of the case.

2. *Application to be supported by original certificate etc.*—No application shall be considered unless it is supported by original certificates as to qualifications, if any, literacy, practical experience, age, sound health, first-aid and character, and is accompanied by evidence that the prescribed fee has been paid.

3. *Holding of examinations*—Examinations shall be held at such times and such places as may be fixed by the Board and notified to the candidate. The examination fees of a candidate who fails to appear for an examination at the appointed place and time without sufficient cause to the satisfaction of the Chief Inspector shall be forfeited.

4. *Appointment of Examiners*—(1) So far as practicable, the examiners appointed by the Board for each examination shall be one manager or assistant manager holding the First or Second Class Manager's Certificate and an Inspector of Mines who shall also act as the Local Secretary.

(2) Except in an emergency, no member of the Board shall act as an examiner.

5. *Type of examination*—(1) The examination shall be conducted orally in Hindi or in the language of the district in which examination is held.

(2) Candidates shall be examined in the following subjects:

- (i) the charging and firing of shots of gunpowder and high explosives both in opencast workings and workings below ground. The placing of shot holes;
- (ii) provisions of the Metalliferous Mines Regulations and Rules and bye-laws made under the Mines Act, 1952, relating to handling and use of explosives and the duties of blasters;
- (iii) methods of examining working places and roadways etc. after shotfiring;
- (iv) dealing with misfires.
- (v) writing of reports.

6. *Conduct of the examination*—Every candidate shall conduct himself as required by the Local Secretary of the examination.

7. *Identity of candidates etc.*—At the time of examination, every candidate shall hand over the authorisation issued to him for appearing in the examination and two unmounted photographs of himself (of a size approximately 5 cm. × 6.5 cm.) to the Local Secretary for the examination who after satisfying himself that each photograph is a likeness of the candidate shall endorse each of them on the back with the name of the candidate.

8. *Successful candidates*—(1) In order to qualify, a candidate must obtain not less than 40 per cent of the maximum marks in each subject and not less than 60 per cent of the total marks.

(2) The Secretary of the examination shall record the left hand thumb impression of every successful candidate.

9. *Unsuccessful candidates*—A candidate who has failed in an examination for a Blaster's Certificate shall not be eligible for re-examination for a period of three months from the date of the examination in which he failed.

G. S. JABBI

*Chief Inspector of Mines
and*

Chairman, Board of (Metalliferous) Mining Examinations

**OFFICE OF THE CHIEF INSPECTOR OF MINES
AND
CHAIRMAN, BOARD OF (METALLIFEROUS) MINING EXAMINATIONS.**

NOTIFICATION

Dhanbad, the 24th June, 1963

No. Board/MM/20006/63—In accordance with the provision laid down in Regulation 13(4) of the Metalliferous Mines Regulations, 1961, the following bye-laws for the conduct of examinations for, and grant of, gas-testing certificate of competency are hereby made :

BYE-LAWS FOR CONDUCT OF EXAMINATION FOR, AND GRANT OF, GAS-TESTING CERTIFICATE OF COMPETENCY

1. *Application to be supported by original certificate etc.*—No application shall be considered unless it is supported by an original certificate (from the manager of a mine or from the Principal of a Technical Institute etc.) to the effect that in view of his knowledge of gas-testing etc., the candidate is a fit person to be admitted to an examination for the grant of a gas-testing certificate and original certificates of age, sound health and character and is accompanied by evidence that the prescribed fee has been paid.

2. *Holding of Examinations*—Examinations shall be held at such times and such places as may be fixed by the Board and notified to the candidate. The examination fees of a candidate who fails to appear for an examination at the appointed place and time without sufficient cause to the satisfaction of the Chief Inspector shall be forfeited.

3. *Appointment of Examiners*—(1) So far as practicable, the examiners appointed by the Board for each examination shall be one manager or assistant manager and an Inspector of Mines who shall also act as the Local Secretary for the examination.

(2) Except in an emergency, no member of the Board shall act as an examiner.

4. *Type of Examination*—(1) The examination shall be conducted orally in Hindi or in the language of the district in which examination is held.

(2) Candidates shall be examined in the following subjects—

- (i) Construction and assembly of flame safety lamps;
- (ii) Effects of inflammable gas in different percentages, and the difference between combustion and explosion;
- (iii) Methods of testing for inflammable gas underground with a flame safety lamp;
- (iv) Provisions of the Metalliferous Mines Regulations made under the Mines Act, 1952, relating to safety lamps and to the presence of inflammable gas in a mine;
- (v) Actual testing for inflammable gas with a flame safety lamp.

5. *Conduct of the Examination*—Every candidate shall conduct himself as required by the Local Secretary of the Examination.

6. *Identity of candidates etc.*—At the time of examination, every candidate shall hand over the authorisation issued to him for appearing in the examination and two unmounted photographs of himself (of a size approximately 5 cm. × 6.5 cm.) to the Local Secretary for the examination who, after satisfying himself that each photograph is a likeness of the candidate, shall endorse each of them on the back with the name.

7. *Successful candidates*—(1) In order to qualify, a candidate must obtain not less than 40 per cent of the maximum marks in each subject and not less than 60 per cent of the total marks.

(2) The Local Secretary of the Examination shall record the left hand thumb impression of every successful candidate.

8. *Unsuccessful candidates*—A candidate who has failed in an examination for a Gas-testing certificate shall not be eligible for re-examination for a period of three months from the date of the examination in which he failed.

G. S. JABBI

*Chief Inspector of Mines
and*

Chairman, Board of (Metalliferous) Mining Examinations
